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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/522,906	11/21/2005	David McLeod	017058-0310800	7008

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EXAMINER	
KITOV, ZEEV V	

ART UNIT	PAPER NUMBER
2836	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/522,906	MCLEOD ET AL.	
	Examiner	Art Unit	
	Zeev Kitov	2836	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *21 June 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1 - 10* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1 - 10* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *31 January 2005* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Examiner acknowledges a submission of the amendment and arguments filed on June 21, 2007. Claims 1, 4 and 7 are amended. A new Office Action follows.

Drawings

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the "junction box" of Claims 1 and 7 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner,

the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

Claims 4 and 7 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. A reason for that is that the claim recites "a junction box", which is neither shown in the Drawings, nor disclosed in the Specification. The Specification merely mentions the "junction box" without really identifying or defining the term. According to the web encyclopedia answers.com, the junction box is an enclosure within which electric circuits are connected. However, it is not clear from the Application what element is implied as "junction box" in the claim 4, either the network coupler shown in Fig. 3, or a whole structure of wiring integration assembly (15a in Fig. 1). For purpose of examination the junction box is interpreted as a whole structure of wiring integration assembly

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1 – 5, 7, 8 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Norton et al. (US 4,808,115) in view of Olsson. Regarding Claim 1, Norton et al. disclose a network bus coupler (line replaceable module, 12 in Fig. 1) mountable on a circuit card (mother-board, 20 in Fig. 1) and including: a housing (128 in Fig. 3) and connectors (50 in Fig. 3) to the housing (col. 8, line 43 to col. 9, line 44); the connectors (50 in Fig. 3) are configured to be coupled to the circuit card connector (160 in Fig. 3). However, it does not disclose an isolation circuitry within the housing. Olsson discloses the isolation circuitry, such as isolation transformers (25, 27 in Fig. 1) located within the housing (41 in Fig. 1). Norton et al. discloses a network bus coupler being located within the housing (shown in Fig. 1). Olsson also discloses his isolation means being located inside the shielded housing (41 in Fig. 1). The reference is pertinent to the case since it deals with the communication bus wiring connections and particularly discloses isolation of the bus elements. It would be obvious to one of ordinary skill in the art at the time the invention was made to have add the isolation transformers of Olsson to the housing of Norton et al., because according to Olsson (col. 1, lines 14 - 30), it is requirement of MIL-STD-1553 standard and is used to provide a galvanic isolation and to prevent short-circuiting; since the Norton system is intended for use in aviation industry (col. 1, lines 14 – 42) the requirements of this standard are to be met.

Regarding Claim 2, the connectors of Norton et al. (see Fig. 3) have a plurality of pins (562, 54 in Fig. 3).

Regarding Claim 3, the recited connector pins are adapted for insertion into their mating pair (160 in Fig. 3),

Regarding Claim 4, Norton et al. disclose the female connectors (160 in Fig. 3) at the bottom of the circuit card (mother-board in Fig. 3), having the receptive sockets for insertion of pins of the male connector of functional modules (52, 54 in Fig. 3).

Regarding Claim 5, Olsson discloses the isolation element as the isolation transformer (25, 27 in Fig.1). A motivation for modification of the primary reference is the same as above.

Regarding Claim 7, Norton et al. disclose following elements of the claim: a junction box, i.e. interconnection structure shown in Fig. 3, a circuit card (20 in Fig. 1 and 3) including plurality of sockets in female connectors (Fig. 3), modular bus/line coupler in form of line replaceable modules (LRM) are shown in Fig. 3. It further discloses plurality of modules having housing (12 in Fig. 1 and 3) having a plurality of pins (shown in Fig. 3) disposed exterior of their housing, which are engageable with some of the sockets of connectors (160 in Fig. 3) of the circuit card/mother board (20 in Fig. 1 and 3);

The lacking element of the claim is an isolation circuitry, which is disclosed by Olsson (isolation transformer (25, 27 in Fig. 1). It would be obvious to one of ordinary skill in the art at the time the invention was made to have added the isolation transformers of Olsson to the system of Norton et al., because (a) both Norton and Olsson references deal with avionic systems, and (b) according to Olsson (col. 1,lines 14 - 30), such isolation is requirement of MIL-STD-1553 standard.

Regarding Claim 8, Olsson discloses the isolation transformers (see above).

Regarding Claim 10, Olsson discloses an aviation component, since MIL-SRD-1553 standard is the standard specific for an aircraft.

Claims 6 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Norton et al. in view of Olsson and Shaffer (US 5,841,778). Regarding Claim 6, Norton et al. disclose the connectors disposed exterior of the module housing (see Fig. 3). Shaffer discloses a bus terminator (elements 110 and 160 in Fig. 1) disposed in the housing and electrically coupled to a connector. In the Norton system modified according to teachings of Shaffer, the terminators are inherently connected to the connectors leading to the communication cables, i.e. located outside the housing. The reference is pertinent to the case since it discloses the communication bus arrangement. It would be obvious to one of ordinary skill in the art at the time the invention was made to have add the terminator elements according to Shaffer to the Norton et al. system, because as well known in the art, it would prevent the signals reflection from the ends.

Regarding Claim 9, Shaffer discloses a bus terminator (elements 110 and 160 in Fig. 1) disposed in the housing and electrically coupled to a connector. A motivation for modificatin of the primary reference is the same as above.

Response to Arguments

Applicant's Arguments have been given careful consideration but they have been found non-convincing. Most of the arguments are now moot in view of new ground(s) of rejection. However, some of them are to be addressed.

Applicant attacks the Shaffer reference for allegedly not disclosing the connectors disposed exterior of the housing. However, Norton et al. disclose the connectors disposed at exterior of the housing. In response to applicant's arguments against the references individually, one cannot show non-obviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Zeev Kitov whose current telephone number is (571) 272 - 2052. The examiner can normally be reached on 8:00 – 4:30. If attempts to reach examiner by telephone are unsuccessful, the examiner's supervisor, Michael Sherry, can be reached on (571) 272 – 2800, Ext. 36. The fax phone number for organization where this application or proceedings is assigned is (571) 273-8300 for all communications.

Z.K.
7/15/2007

7/20/07

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